



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,613	09/17/2003	Sean J. Mullan	SUN03-06(P9621)	4049
58408	7590	03/14/2008	EXAMINER	
BARRY W. CHAPIN, ESQ.			CHAI, LONGBIT	
CHAPIN INTELLECTUAL PROPERTY LAW, LLC			ART UNIT	PAPER NUMBER
WESTBOROUGH OFFICE PARK				2131
1700 WEST PARK DRIVE				
WESTBOROUGH, MA 01581				
MAIL DATE		DELIVERY MODE		
03/14/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/664,613	MULLAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	LONGBIT CHAI	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 February 2008.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-4,6-20,22,23,25-32 and 35-37 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4,6-20,22,23,25-32 and 35-37 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 07 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.                                                         | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

1. At present, the pending claims are 1 – 4, 6 – 20, 22 – 23, 25 – 32 and 35 – 37.

### ***Response to Arguments***

2. Applicant's arguments with respect to the instant claims have been fully considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

3. Claim 29 is objected to because of the following informalities: “the signature substantially uncreatable by data other than the computed digest” should be replaced with “the signature uncreatable by data other than the computed digest (i.e. remove substantially)” because it may not be clear regarding what exactly constitutes the substantiality. Appropriate correction(s) is (are) required. Any other claims not addressed are objected by virtue of their dependency should also be corrected. Similar corrections are required for claim 8 and 27.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 – 4, 6 – 16, 20 and 22 – 23, 25 – 32 and 35 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowe et al. (U.S. Patent 2003/0093678), in view of Cooper et al. (U.S. Patent 2001/0051996).

As per claim 29, Bowe teaches method for transmitting data in a network system according to a signature based protocol comprising:

identifying, at a server, data adapted for cryptographic transmission (Bowe: Abstract); computing a digest on the identified data, the digest substantially indicative of the identified data (Bowe: Para [0132] Line 8); building, according to a cryptographic scripting language (Bowe: Para [0019] and Para [0071] – [0074]: XML used as a cryptographic scripting language), a signature block, the signature block having a signed data portion, a signature value portion, a key information portion, and at least one information object portion, the signature value portion operable to store the signature as an authentication indicator according to the predetermined protocol, further comprises storing the signature in the signature value portion (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: XML used between the client signature request and Server signature response is considered as the predetermined protocol);

storing the identified data in the signed data portion of a signature block (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: signed object that also contains either the address of the signed object or contains the original object and the signature);

retrieving, from a public key infrastructure (PKI) a public and private key pair operable for cryptographic operations (Bowe: Para [0023], Para [0074] and Para [0139]: the KeyInfo element can contain a X509 data element so that the client can retrieve the public key from it);

generating, at a server, a signature value from the private key corresponding to the computed digest, the signature substantially unrecreatable by data other than the computed digest (Bowe: Para [0035] and Para [0037]);

storing the signature value in the signature value portion of the signature block, the signature value portion and corresponding signature value persisting as a signature block according to the predetermined protocol including the payload data portion (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: signed object that also contains the original object (i.e. payload data) and the signature), the signature value covering the covered data portion and the information object portion remaining independent of the signature value (see Cooper below);

storing the public key corresponding to the private key in the key information portion to provide a self-authenticating transmission (Bowe: Para [0023] / Para [0139] and Para [0074]: the KeyInfo element can contain a X509 data element so that the client can retrieve the public key from the certificate for verification purpose); and

transmitting, according to the predetermined protocol, the signature block to a client also conversant in the scripting language and operable to store payload data in the information object portion independently of the signature value portion, storing in the information object portion further comprises storing the payload data at a nonsigning client (see above), the client being unencumbered by signature generation operability (Bowe: Para [0035] and Para [0037]), the covered data portion remaining unwritten by the nonsigning client (see Cooper below), the signature block being a script having fields defined by a predetermined metalanguage syntax (Bowe: Para [019] and Para [0071] – [0074]: XML itself used between the client signature request and Server signature response is indeed a predetermined metalanguage – This is consistent with the disclosure of the instant specification (SPEC: Page 17 / 1<sup>st</sup> Para / Line 6 – 8), the metalanguage syntax defining the position of the covered data portion (Bowe: Para [0072]):

the address / position of the data to be signed (i.e. to be covered)), and corresponding signature, the signature block receivable by a recipient device conversant in the predetermined metalanguage syntax for decoding the message (Bowe: Para [0019] and Para [0071] – [0074]: signed object that also contains the original object (i.e. payload data) and the signature).

However, Bowe does not explicitly teach the signature value covering the covered data portion and the information object portion remaining independent of the signature value; and the covered data portion remaining unwritten by the nonsigning client.

**Cooper teaches the signature value covering the covered data portion and the information object portion remaining independent of the signature value; and the covered data portion remaining unwritten by the nonsigning client (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7: a digital signature is created as a watermark using a watermark signature key and a watermark (i.e. digital signature) is generated based upon the content ID (i.e. uniquely identify a related content to be downloaded), the source of a content, and the identity of the user. Thereby, the covered / signed data portion and the information object portion (i.e. content payload) are separate and independent portions with respect to the signature generation).**

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Cooper within the system of Bowe because (a) Bowe teaches providing digital signatures on electronic documents and for authenticating the documents by verifying their digital signatures (Bowe: Para [0002]) and (b) Cooper teaches a more effective mechanism in marking and creating a digital signature as a watermark using a watermark signature key by identifying digital media files with authentication information solely based upon the content ID (i.e. uniquely identify a related content to be downloaded), the

source of a content, and the identity of the user which is not involved with the content payload data (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 1, 10, 20, 32 and 36, the claim limitations are met as the similar reasons as that set forth above in rejecting claim 29.

As per claim 2 and 11, Bowe teaches the signature block further includes a signature value portion, the signature value portion operable to store the signature as an authentication indicator according to the predetermined protocol, wherein storing further comprises storing the signature in the signature value portion (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: signed object that also contains either the address of the signed object or contains the original object and the signature).

As per claim 3, 12 and 22, Bowe teaches the signature block further includes a key information portion, further comprising storing an authentication indicator to a validation instrument in the key information portion, the validation instrument operable to authenticate the signature value portion using the signature (Bowe: Para [0023] and Para [0074]: the KeyInfo element can contain a X509 data element so that the client can retrieve the public key from it).

As per claim 4 and 23, Bowe teaches the validation instrument corresponds to an inverse operation of the generating of the signature (Bowe: Para [0023] / Para [0139] and Para [0074]: the KeyInfo element can contain a X509 data element so that the client can retrieve the public key from the certificate for verification purpose).

As per claim 6 and 25, Bowe teaches storing the payload data further comprises generating a transmission block conformant with the predetermined protocol and operable to be received as a signature authenticated transmission by a destination node according to the predetermined protocol (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: XML used between the client signature request and Server signature response is considered as the predetermined protocol).

As per claim 7 and 26, Bowe teaches generating the signature further comprises generating a signature corresponding to the covered data portion of the signature block (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7: a digital signature is created as a watermark using a watermark signature key and a watermark (i.e. digital signature) is generated based upon the content ID (i.e. uniquely identify a related content to be downloaded), the source of a content, and the identity of the user. Thereby, the covered / signed data portion and the information object portion (i.e. content payload) are separate and independent portions with respect to the signature generation).

As per claim 8 and 27, Bowe teaches computing a digest on the covered data portion, the digest substantially indicative of the data in the covered data portion (Bowe: Para [0132] Line 8) & (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 9 and 28, Bowe teaches the validation instrument is a public key and generating the signature further comprises generating a signature using the private key corresponding to the public key (Bowe: Para [0139]).

As per claim 13, Bowe teaches the receiving is performed by a nonsigning client which does not compute the signature and is unencumbered by components operable to compute the signature (Bowe: Para [0035] and Para [0037]).

As per claim 14, Bowe teaches indexing a remote signature repository, and the client is further operable to store the received signature in the signature block according to the predetermined protocol (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: XML used between the client signature request and Server signature response is considered as the predetermined protocol).

As per claim 15, Bowe teaches receiving an authentication instrument corresponding to the signature, and storing the received authentication instrument in the signature block with the signed information portion and the signature (Bowe: Para [0019], Para [0038] / Para [0072] and Para [0074]: signed object that also contains the original object (i.e. payload data) and the signature) & (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 16, Bowe teaches the received authentication instrument is a public key corresponding to the private key for generating the signature, and storing further comprising forming a self-signed message by storing the public key in the key information portion (Bowe: Para [0023] / Para [0139] and Para [0074]: the KeyInfo element can contain a X509 data element so that the client can retrieve the public key from the certificate for verification purpose).

As per claim 30, Bowe teaches the scripting language is operable to incorporate signature components such that the scripting language is operable with signing capability when signature components are available and operable without signing capability when signature components are unavailable, further comprising:

identifying the signature value portion from a subset of available fields in the signature block, the signature value corresponding to the identified subset and the remaining available fields independent of the signature value (Bowe : Para [0019]);

identifying, from the remaining available fields, payload data portions operable for subsequent storage of data independent of the signature value and the signature value portion, the payload data portions operable to be modified by subsequent recipients, wherein the signature value portion and corresponding signature value persist as a signature block according to the predetermined protocol including the payload data portions ((Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 31, Bowe as modified teaches a system for signature use by a nonsigning client generating, at a server, the nonsigning client unencumbered from cryptographic operation components, comprising:

at the client, identifying payload data adapted for storage in the information object portions according to the scripting language independent of the signature value (Bowe: Para [0019] and Para [0071] – [0074]: XML I used as a cryptographic scripting language); and storing the identified payload data in the information object portions in a nondestructive manner, the nondestructive manner operable to preserve the covered data portion ((Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 37, Bowe as modified teaches the predetermined protocol is XML and the signatures are conformant to XML signatures, such that storing into the information object portion includes writing in to payload fields in an XML message, the signature being an XML signature and remaining unchanged with respect to the values written in the payload fields (Bowe: Para [0019] and Para [0071] – [0074]: XML used as a cryptographic scripting language) & (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7: a digital signature is created as a watermark using a watermark signature key and a watermark (i.e. digital signature) is generated based upon the content ID (i.e. uniquely identify a related content to be downloaded), the source of a content, and the identity of the user. Thereby, the covered / signed data portion and the information object portion (i.e. content payload) are separate and independent portions with respect to the signature generation).

2. Claims 17 – 19 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowe et al. (U.S. Patent 2003/0093678), in view of Cooper et al. (U.S. Patent 2001/0051996), and in view of Kato et al. (U.S. Patent 2002/0040431).

As per claim 17 and 35, Bowe as modified teaches at the nonsigning client, a plurality of signatures and corresponding covered data portions (Bowe : Para [0035] and Para [0037]). However, Bowe as modified does not expressly teach selecting a first signature for inclusion in a first signature message for transmission to a destination recipient; selecting a second signature different than the first signature for inclusion in a second signature message for transmission to the same destination recipient.

Kao teaches selecting a first signature for inclusion in a first signature message for transmission to a destination recipient; selecting a second signature different than the first

signature for inclusion in a second signature message for transmission to the same destination recipient (Kato : Para [0066] and Para [0080]: (a) a destination application is qualified as a destination recipient (b) more than one signature target information can be included in the same XML signature block S).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Kato within the system of Bowe as modified because (a) Bowe teaches providing digital signatures on electronic documents and for authenticating the documents by verifying their digital signatures (Bowe: Para [0002]) and (b) Kato teaches a more convenient mechanism for XML signatures so that a plurality of signatures associated with XML documents can be provided under management in accordance with signature requests from the clients (Kato: Para [0026]).

As per claim 18, Bowe as modified teaches selecting the first and second signatures is performed based on signature selection logic, the signature selection logic for analyzing the covered data portion and the information object portion of the signature message to select an expected signature result at the destination recipient (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7).

As per claim 19, Bowe as modified teaches the signature selection logic is operable for analyzing the covered data portion based on at least one of the content type, size, creation date, and sparsity of the data (Cooper: Para [0279] Line 1 – 4, Para [0017] Line 8 – 10 and Para [0019] Line 5 – 7: based upon the content ID (i.e. uniquely identify a related content to be downloaded), the source of a content, and the identity of the user).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONGBIT CHAI whose telephone number is (571)272-3788. The examiner can normally be reached on Monday-Friday 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2131

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Longbit Chai/

Primary Examiner, Art Unit 2131

Longbit Chai Ph.D.  
Patent Examiner  
Art Unit 2131  
3/5/2008